

That which is claimed is:

1. A pharmacophore of a binding surface of a viral RNA-dependent RNA polymerase, wherein the pharmacophore is characterized by a) selective binding to a binding surface on a viral RNA-dependent RNA polymerase and b) inhibition of viral RNA-dependent RNA polymerase activity.

2. The pharmacophore of claim 1, wherein the pharmacophore inhibits interaction of polymerase-polymerase binding by interaction with Interface I of a viral RNA-dependent RNA polymerase.

3. The pharmacophore of claim 2, wherein the pharmacophore inhibits polymerase-polymerase binding by selectively binding to a surface structurally defined by poliovirus RNA-dependent RNA polymerase residues 342 and 349 or corresponding positions thereof of a RNA-dependent RNA polymerase.

4. The pharmacophore of claim 2, wherein the pharmacophore binds selectively to an binding surface structurally defined by poliovirus RNA-dependent RNA polymerase residues 446, 455 and 456 or corresponding positions thereof of a RNA-dependent RNA polymerase.

5. The pharmacophore of claim 1, wherein the pharmacophore inhibits interaction of polymerase-polymerase binding by interaction with Interface II of a viral RNA-dependent RNA polymerase.

6. The pharmacophore of claim 5, wherein the pharmacophore inhibits polymerase-polymerase binding by selectively binding to a surface structurally defined by poliovirus RNA-dependent RNA polymerase residues 30, 33 and 34 or corresponding residue positions thereof of a RNA-dependent RNA polymerase.

7. The pharmacophore of claim 1, wherein the polymerase is a picornaviral RNA-dependent RNA polymerase.
8. The pharmacophore of claim 1, wherein the pharmacophore comprises a peptide.
9. The pharmacophore of claim 8, wherein the peptide further comprises an element that facilitates entry into a host cell.
10. The pharmacophore of claim 8, wherein the peptide comprises the sequence of SEQ ID NO:5.
11. The pharmacophore of claim 1, wherein the pharmacophore is an antibody immunospecific for a polymerase-polymerase binding surface of a viral RNA-dependent RNA polymerase.
12. The pharmacophore of claim 1, wherein the pharmacophore is a small molecule.
13. The pharmacophore of claim 1, wherein the pharmacophore is detectably labeled.
14. A composition for treating a viral infection, comprising:  
a pharmacophore characterized by a) selective binding to a binding surface of a viral RNA-dependent RNA polymerase and b) activity in disruption of viral RNA-dependent RNA polymerase activity; and  
a pharmaceutically acceptable carrier.
15. The composition of claim 14, wherein the pharmacophore is further characterized by activity in disruption of a plurality of positive strand virus.

16. The composition of claim 14, wherein the pharmacophore has activity in disruption of a picornavirus RNA-dependent RNA polymerase.

17. A method of treating viral infection in a subject, comprising the step of administering to the subject a composition of claim 14.

18. The method of claim 17, wherein the subject is mammalian.

19. A computer comprising a representation of a pharmacophore in computer memory that either designs a molecular structure that possesses a biological activity or screens a molecular structure for possession of the biological activity wherein the pharmacophore comprises:

a three-dimensional array of points defining a specific shape and volume, wherein the three-dimensional array of points is an aggregate average shape of a molecule or a plurality of molecules that optimally fit a binding interface of a viral RNA-dependent RNA polymerase, wherein the aggregate average shape is represented by a coordinate system configured in computer memory, and the molecule or the plurality of molecules possess the same or similar biological activity.

20. The computer of claim 19, wherein the pharmacophore binds Interface I of a viral RNA-dependent RNA polymerase.

21. The computer of claim 20, wherein the pharmacophore selectively binds to a surface defined by poliovirus RNA-dependent RNA polymerase residues 342 and 349 or corresponding positions thereof of a RNA-dependent RNA polymerase.

22. The computer of claim 20, wherein the pharmacophore binds selectively to an binding surface structurally defined by poliovirus RNA-dependent RNA polymerase residues 446, 455 and 456 or corresponding positions thereof of a RNA-dependent RNA polymerase.

23. The computer of claim 19, wherein the pharmacophore inhibits interaction of polymerase-polymerase binding by interaction with Interface II of a viral RNA-dependnet RNA polymerase.

24. The pharmacophore of claim 23, wherein the pharmacophore inhibits polymerase-polymerase binding by selectively binding to a surface structurally defined by poliovirus RNA-dependent RNA polymerase residues 30, 33 and 34 or corresponding residue positions thereof of a RNA-dependent RNA polymerase.

For the record